UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,238	02/01/2001	Ian B. Maclean	NRT.0090US	8146

21906 7590 11/23/2007		EXAMINER
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ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
11/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	**Applicant(s)**
Office Action Summary	09/775,238	MACLEAN, IAN B.
	Examiner	**Art Unit**	
	Daniel J. Ryman	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 November 2007</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>3-7,10,12-21,23-25 and 27-33</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>3-7,10,12-21,23-25 and 27-33</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 7 November 2007 have been fully considered but they are not

persuasive. Applicant asserts that "the Office Action premised the obviousness rejection partly

on the following finding: 'see also Specification: p. 10, lines 21-31, which defines the PDP

context Create Request as a GTP packet.'" Response, p. 8. Examiner notes that the use of the

introductory signal "see also" denotes that the Specification was used only as support in addition

to the Lager reference, such that the Office Action did not premise the obviousness rejection on

the recited finding. Examiner submits that, assuming *arguendo* that Applicant's allegation is

true, the claims are nevertheless properly rejected in view of Lager.

2.   Applicant then asserts that "[t]o the extent that the Office Action is asserting that all PDP

Context Request messages are carried as a GTP data unit in the payload portion of an IP packet,

that assertion is wrong." *Id.* Examiner respectfully disagrees. According to the 3G

Specification, signaling messages are composed of the GTP header followed by information

elements, § 7.3, where the Create PDP Context Request is a signaling message, *id.* at § 7.5.1

(where Table 4 outlines the various information elements included in a Create PDP Context

Request message). In addition, "UDP/IP is the only path protocol defined to transfer GTP

signaling messages". *Id.* at § 9.1. Thus, similar to the aforementioned passage of Applicant's

Specification, the 3G Specification sets forth that the Create PDP Context Request is transmitted

as an IP packet containing a GTP "data unit", i.e. the GTP header coupled with the information

elements of the Create PDP Context Request, which can carry the PDP Context Create Request,

i.e. the information elements of the Create PDP Context Request. In view of the foregoing,

Examiner submits that all PDP Context Request messages are carried as a GTP "data unit" in the

payload portion of an IP packet.

3.   Applicant further asserts that "[i]n Lager, since the tunnel is to be initiated by the PDP

Context Create Request, that would mean that the PDP Context Create Request message of

Lager would not be carried in a GTP data unit, since the GTP tunnel has not yet been

established." Response: p. 9 (emphasis omitted). However, Applicant's argument presupposes

that all GTP data units must be transmitted in a tunnel. This is incorrect. "GTP" stands for

GPRS Tunneling Protocol. Thus, a "GTP data unit" is simply a data unit sent by the GPRS

Tunneling Protocol. According to the 3G Specification, all signaling is performed by GTP, § 7,

even though the signaling is not sent through tunnels, § 7.1. As such, all signaling messages

constitute "GTP data units" because they comply with the GPRS Tunneling Protocol, even

though they are not sent through a tunnel. In light of the foregoing, Examiner maintains that the

Create PDP Context Request message is a GTP data unit, even though it is not transmitted

through a tunnel.

4.   Applicant proceeds to assert that the Examiner has "mis-read the 3G Specification,"

Response: p. 9, when asserting that "the Create PDP Context Request, i.e. a GTP signaling

message, contains the SGSN address for signaling purposes and where this address may be the

same as the address in the header," *id.* (citing to the Office Action, mailed 8/7/2007, p. 3),

because "the actual teaching on page 16 of the 3G Specification is that the SGSN address for

signaling and the SGSN address for user traffic 'may differ from that provided by the underlying

network service (e.g. IP),'" *id.* (citing to the 3G Specification, p. 16). Applicant appears to assert

that because the addresses "may" differ, this means that the addresses *must* differ. This is

incorrect. The use of the word "may" permits the same address to be used for both the SGSN

address for signaling, i.e. the address in the payload portion of the message, and the address

provided by the underlying network service, i.e. the address in the header portion of the message.

As such, Examiner maintains that the 3G Specification teaches that the address in the header and

in the payload may be the same.

5. According to Applicant, "this teaching of the 3G Specification . . . would have actually

led away from the claimed invention, since providing the different address in the Create PDP

Context request of Lager and the 3G Specification would have rendered the translation of private

network addresses in both the header and payload portion unnecessary." *Id.* First, Examiner

notes that Lager teaches that the intra-PLMN network is a private network, col. 4, lines 24-32,

such that the address in the header portion must be a private address, which would require

translation. To obviate the need to translate private addresses in both the header and payload

portion by using different addresses in each poerion, as Applicant alleges, the address in the

payload portion must be a public address (if the address in the payload portion is a private

address, even if different than the private address in the header, there is still a need for

translation). Under this scheme, the SGSNs and the GGSNs would have to know their own

public addresses, i.e. each node would have to either be permanently assigned a public address or

engage in signaling with another device to determine a dynamically assigned public address.

Such a scheme would either nullify one of the reasons for using private addresses, namely to

conserve public addresses, since each SGSN and GGSN would have to be permanently assigned

a public address, or such a scheme would require extra signaling in the network since each

SGSN and GGSN would have to have a way to determine its dynamically assigned public

address. Either of these situations imposes a cost. Thus, one of ordinary skill in the art at the

time of the invention may have concluded that the cost of translating private addresses in both

the header portion and payload portion of the message is less than the costs imposed by having

the SGSNs and GGSNs either have a permanently assigned public address or signaling with

another device to determine a dynamically assigned public address. In light of the foregoing,

Examiner maintains that it would have been obvious to one of ordinary skill in the art at the time

of the invention to use the same address in the header and payload portions of the message.

6.   Applicant proceeds to allege that the Examiner erred by "assert[ing] that it would have

been obvious to combine Lager and the 3G Specification 'to increase the industrial applicability

of Lager's system by having the Create PDP Context Request message of Lager comply with the

requirements of the 3G Specification.'" Response: pp. 9-10 (citing to Office Action mailed

8/7/2007, p. 4). Applicant bases this allegation on the conclusion that this motivation is "based

on an erroneous reading of the 'requirements' of the 3G Specification." *id.* at 10, where a

"person of ordinary skill in the art reading the 3G Specification would have realized that a

solution to the problem of inconsistent addresses at the receiving end could be resolved by

incorporating an address in the PDP Create Context request message that is different from the

header of the IP packet," *id.* However, as outlined above, one of ordinary skill in the art would

not necessarily have come to this realization because using different addresses imposes

additional costs on the system in the form of extra signaling or the permanent assignment of

public addresses. As such, one of ordinary skill in the art at the time of the invention would have

read the 3G Specification as permitting the use of the same address in both the header and

payload portions, and would have pursued this format to arrive at a message that complied with the requirements of the 3G Specification.

7.   Finally, Applicant asserts that "the Office Action's citation of Rao as providing reason to modify the teachings of Lager and the 3G Specification is erroneous" because "it is clear that persons of ordinary skill in the art at the time of the invention did not even recognize the issue of having private network addresses in both the header and payload portion of an IP packet in a wireless network environment." *Id.* In view of the foregoing, Examiner maintains that persons of ordinary skill in the art at the time of the invention would have recognized the issue of having private network addresses in both the header and payload portion of an IP packet in light of the teachings of Lager and the 3G Specification. As such, Examiner's citation of Rao is not erroneous.

8.   Applicant also alleges that the "Office Action has engaged in impermissible hindsight in applying the teachings of Rao, which are related to wired networks, to the teachings of Lager and the 3G Specification, which provide objective evidence that a person of ordinary skill in the wireless art would clearly not have recognized any need to use the techniques of Rao." *Id.* First, Applicant has incorrectly identified the skill of a person of ordinary skill in the art as only pertaining to the wireless art. Given the teachings of Lager, which contains interfaces between private and public networks, the person of ordinary skill in the art at the very least would be skilled in network address translation. In addition, the GPRS system is a combination of wireline and wireless components. For instance, Fig. 1 of Lager shows that once the signal transmitted from the mobile is received by the base station, all communication occurs over wired networks. As such, Examiner is not applying impermissible hindsight by combining Rao, which

deals with the interfacing of private and public networks in a wired environment, with Lager and

the 3G Specification, which deal with interfacing between private and public networks in a wired

environment.

9.   In view of the foregoing, Examiner maintains that the claims are obvious in view of the

cited prior art.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

11.   Claims 3-7, 10, 12-21, 23-25, and 27-33 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lager et al. (USPN 6,636,502), of record, in view of 3G TS 29.060 V3.2.2

(1999-12) Specification, entitled "GPRS Tunnelling Protocol (GTP) across the Gn and Gp

Interface" (hereafter referred to as "3G Specification"), of record, in further view of Rao (USPN

6,535,511), of record.

12.   Regarding claims 3-5, 10, 18, 19, 24, and 25, Lager discloses a first Internet Protocol (IP)

packet having a payload portion containing a General packet radio service Tunneling Protocol

(GTP) data unit (Lager: col. 3, lines 26-29, where the SGSN and the GGSN are connected using

an IP network, such that any packet transmitted over this connection will be an IP packet; and

Lager: Fig. 6 and col. 6, lines 30-34 and 52-60, where the SGSN sends the GGSN a "Create PDP

Context Request" message, ref. S3', over the IP link to initiate a tunnel between the SGSN and

the GGSN, i.e. a "GTP data unit" in the payload portion of the IP packet; see also Specification:

p. 10, lines 21-30, which defines the PDP Context Create Request as a GTP packet). Lager further discloses that the first IP packet contains a private network address of a first GPRS support node in the first wireless network (Lager: col. 4, lines 24-32, where the SGSN resides on a private IP network, such that the IP packet will contain a private network address of the SGSN in the first wireless network, i.e. PLMN).

Lager does not expressly disclose that the first IP packet has a header containing a private network address of a first GPRS support node in the first wireless network and a GTP data unit in the payload portion containing the private network address of the first GPRS support node. However, the 3G Specification dictates that the Create PDP Context Request will have a header containing a network address of a first GPRS support node in the first wireless network and a GTP data unit in the payload portion containing the network address of the first GPRS support node (3G Specification: pp. 53 and 54, where the GTP signaling messages are carried over IP; p. 55, where the header of the IP packets contain the source address of the originating GSN node, i.e. a first GPRS support node; p. 16, where the Create PDP Context Request, i.e. a GTP signaling message, contains the SGSN address for signaling purposes and where this address may be the same as the address in the header; and pp. 17 and 52, where this address is an IP address). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the first IP packet have a header containing a private network address of a first GPRS support node in the first wireless network, and a GTP data unit in the payload portion of the first IP packet containing the private network address of the first GPRS support node in order to increase the industrial applicability of Lager's system by having the Create PDP Context Request message of Lager comply with the requirements of the 3G Specification.

Lager in view of the 3G Specification does not expressly disclose translating, by a network address translator executed on one or more microprocessors, the private network address in each of the header and payload portion to a public network address; and sending by the network address translator executed on the one or more microprocessors, a second IP packet having a header and payload portion to a second GPRS support node in the second wireless network, each of the header and payload portion of the second IP packet containing the public network address translated from the private network address. However, Lager does disclose that the SGSN and the GGSN reside on private networks and that the IP network interconnecting the SGSN and the GGSN is a public network (Lager: col. 4, lines 24-41). Lager further discloses that a border gateway is used to interface the private and the public networks (Lager: col. 4, lines 24-41). Rao teaches, in a system for connecting private networks to public networks, that network address translation is required to pair up private IP addresses and public IP addresses to enable a packet originating on a private network to be transmitted across a public network (Rao: col. 1, lines 25-35). Rao further discloses that addressing information embedded in message payload data must also be translated (col. 1, lines 45-48). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to translate, by a network address translator executed on one or more microprocessors in Lager's border gateway, the private network address in each of the header and payload portion of the Create PDP Context Request message of Lager, to a public network address, as taught by Rao, and to send by the network address translator executed on the one or more microprocessors, a second IP packet having a header and payload portion to a second GPRS support node in the second wireless network, each of the header and payload portion of the second IP packet containing the public network address translated from

the private network address. It would have been obvious to one of ordinary skill in the art at the

time of the invention to do this to ensure that the SGSN address for signaling contained in the

Create PDP Context Request message is properly translated to a public address so that the GGSN

can use the public address to send a signaling message to the SGSN.

13.   Regarding claim 6, Lager in view of the 3G Specification in further view of Rao discloses

that receiving the first IP packet containing the private network address of the first GPRS support

node comprises receiving the first IP packet containing the private network address of a Serving

GPRS Support Node, and wherein sending the second IP packet to the second GPRS support

node comprises sending the second IP packet to a Gateway GPRS Support Node (Lager: Fig. 6,

where the Create PDP Context Request message is sent from an SGSN to a GGSN).

14.   Regarding claim 7, Lager in view of the 3G Specification in further view of Rao discloses

determining whether to establish a data session on a packet data network on behalf of a roaming

mobile station through the first wireless network or the second wireless network (Lager: col. 3,

lines 9-25, where the SGSNs track new mobile stations in their area and determine whether the

mobile station is permitted to join the network).

15.   Regarding claim 12, 27, and 28, Lager in view of the 3G Specification in further view of

Rao discloses that translating the private network address in the payload portion of the data

packet is performed by identifying a string in the payload portion containing the private network

address (Rao: col. 4, lines 60-67, where a table is used "to identify application specific embedded

addressing information in IP packets," see also col. 4, lines 9-19).

16.   Regarding claims 13 and 23, Lager in view of the 3G Specification in further view of Rao

discloses that the first packet has a payload portion containing a General Packet Radio Service

Tunneling Protocol (GTP) data (3G Specification: pp. 53 and 54, where the GTP signaling messages are carried over IP; see also Specification: p. 10, lines 21-30, which defines the PDP Context Create Request as a GTP packet), the GTP data containing the private network address (Lager: col. 4, lines 24-32, where the SGSN and the GGSN reside on private IP networks, such that the IP packet will contain a private network address of the SGSN in the first wireless network, i.e. PLMN, and 3G Specification: p. 16, where the Create PDP Context Request, i.e. a GTP signaling message, contains the SGSN address for signaling purposes and where this address may be the same as the address in the header).

17.   Regarding claim 14, Lager in view of the 3G Specification in further view of Rao discloses receiving the first packet from a Serving General packet radio service Support Node (SGSN) in the first wireless network, the first node comprising the General Packet Radio Service support node (Lager: Fig. 6, where the Create PDP Context Request message originates at an SGSN and is destined for a GGSN).

18.   Regarding claim 15; Lager in view of the 3G Specification in further view of Rao discloses sending the second packet to a GGSN in a second wireless network, the second node comprising the GGSN (Lager: Fig. 6, where the Create PDP Context Request message originates at an SGSN and is destined for a GGSN).

19.   Regarding claim 16, Lager in view of the 3G Specification in further view of Rao discloses receiving the first packet from the SGSN associated with a first public land mobile network (PLMN) and sending the second packet to the GGSN associated with a second PLMN (Lager: Figs. 2 and 3 and col. 4, lines 24-41).

20.   Regarding claims 17 and 20, Lager in view of the 3G Specification in further view of Rao

discloses that the first wireless network is associated with a first network operator and the second

wireless network is associated with a second network operator (Lager: col. 4, lines 24-41, where

the private networks are corporate networks and the public network is the Internet, and where the

networks are on different PLMNs).

21.   Regarding claim 21, Lager in view of the 3G Specification in further view of Rao

discloses that the interface is adapted to receive the data packet comprising an Internet Protocol

packet (Lager: col. 3, lines 26-29, where the packets are sent over an IP network; see also 3G

Specification: p. 54).

22.   Regarding claims 29-33, Lager in view of the 3G Specification in further view of Rao

discloses that receiving the first data packet comprises receiving the first data packet having the

payload portion that contains a Packet Data Protocol (PDP) Context Create request, the PDP

Context Create request containing the private network address of the first node (Lager: Fig. 6,

see also 3G Specification: p. 16).

Conclusion

23.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The

examiner can normally be reached on Mon.-Fri. 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel J. Ryman
Examiner
Art Unit 2616